## Tunneling Under the Hudson River

Company, of the Hudson tunnel, which In some cases their motive power is de-

six ounces.

E of the crowning feats of greater extent in Europe than in this this wonderful era, in country. Narrow-gauge lines are quite which such marvelous ad- common there, and in some parts of vances have taken place, is France the engines used on these lines the establishment, by the appear wholry insufficient for the se-New York and New Jersey Railroad rious work which they really perform.



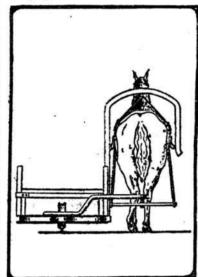
FIRST AIR LOCK.

will afford passage for trolley cars be- rived from Laphtha. Persistent agizatween Christopher street, New York tion has recently resulted in Parlia-Oity, and Fifteenth street, Jersey City, in a position where safe and rapid progress is assured.

This work, which was inaugurated in 1879, was, after the loss of a score of lives and the construction of 2000 feet of brick tunnel, abandoned in 1883. After a lapse of seven years work was besumed in 1890, and continued for one year, when it was again abandoned Operations have been resumed again, and it is now only a question of a short time when underground communication will be established between Jersey City and New York.

It is a matter of great curiosity and admiration to the average person how these human beavers, working toward a common point, yet each unable to discern the other, can meet in midstream so that the centre lines of tunnels coincide. The modern appliance which makes this sort of work possible is the shield. This is a cylindrical tube of about twenty-three feet diameter, made of steel plates, and both strengthened and divided into compartments by means of steel webs placed cross-sectionally in both vertical and horizontal directions, forming a bulkhead across the shield. Outside of this is a cutting edge which penetrates the silt. The

mentary sanction being given to the construction of a mono-rail system between Manchester and Liverpool, where it is proposed to do a regular railroad



TRANSPORTATION ON A SINGLE RAIL,

business on a construction above ground on which the cars and engine are bal anced like a bag of grain thrown over accompanying illustrations from the a horse's back. It is promised that the American Inventor show the first air average railroad speed shall be exceed-

the construction of the narrow-gauge

line, but a patent has been recently is-

been issued to a Viennese engineer.

The cars of this system are mounted

on two wheels, one following the other

and both rather deeply grooved to pre-

vent them from leaving the rail. The

purpose. In addition the animal is har-

nessed to the car in the usual manner

with the use of traces, and the work

"All Hands Black Faces."

in the royal navy is "All hands black

adequately fulfilled each of our war-

ships carries among its stores a supply

of such pigment as is used for the

are made as little visible as possible,

but the faces of the men must be

blackened, for when powerful night

glasses are used the showing of a white

face is far more palpable than any

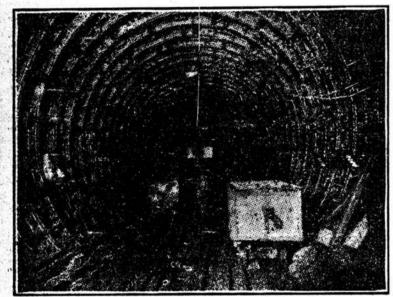
Homeless Children.

landsman would suppose.-London Tit-

Bits.

One of the most curious orders given

moving the load is done in this way.



CLEANING UP AFTER A "SHOVE."

lock in the tunnel and the process of ed by far without the same element of cleaning up the debris after a "shove" danger. It was thought that the minimum of the shield has been made.

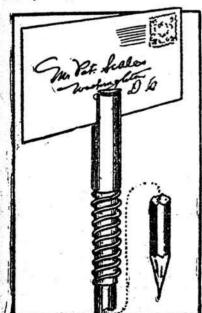
### A Pocket Letter Scales.

"Will a two-cent stamp be sufficient postage for my letter?" How often the letter writer is confronted with this problem. And as frequently as the problem arises just as frequently is it found that there is no handy means of ascertaining whether the single stamp will serve to satisfy the demands of your Uncle Sam for carrying the missive to its destination. Under these circumstances the prodigal generally slaps on another stamp in order to take no the motive power. An arm fastened risk on delay, and forthwith drops the letter into a mail box.

On the train, in the home and at doz ens of other places and under a variety of circumstances it is not convenient to have the ordinary letter scales at hand. The solution of the question seems to

be presented by the inventor of letter scales which can be carried in the pocket. In fact, the contrivance is so designed that it actually fits upon the top of a lead pencil.

It consists of a metallic cylinder containing a spring properly regulated and a graduated scale. At the upper end is a slit into which the letter to be same purpose on the stage. This order weighed is placed. Its weight lowers the cylinder, whose lower edge indi-



cates on the scale the weight as well as gives the figures representing the

pocket scales epistles of as much as |

# ON A SINGLE RAIL.

Novel Mode of Transportation on a Light Railroad.

Light railways-are used to a much

on the southern shores of the Lake of Bolsena, near Monteflascone, Italy. When I resided in the locality, many years ago, says a writer in Golden -enny, I made a sketch of the main portion of that strange village, a copy of which I give here. As will be seen by the apparent absence of houses, and the presence of numerous chimneys, all the inhabitants live under ground, the only building above ground being the one shown in the centre of the picture, and that is a kind of vestibule, or opening to the subterranean and more spacious dwelling which faces toward the east on the other side of the hill. It belongs to the principal resident, or chief among the dwellers of this hilly and picturesque region. I visited the interior of several of those extraordinary dwellings, and was much impressed by the neatness. cleanliness and comfort which prevailed. The apartments were remarkably cool, and I was told that during the winter they were quite warm, and that fires are seldom wanted except for cooking. The rooms and passages are all cut out of the solid ground, and he fireplaces and chimneys act prin-

Where the People Live in

Subterranean Homes.

Here is aidescription of a queer town,

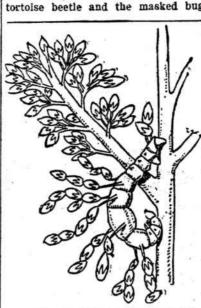
San Stephano, or Grotto of San Ste-

phano, is the name of the place. It is

Covers Itself With a Bouquet of Buds. 

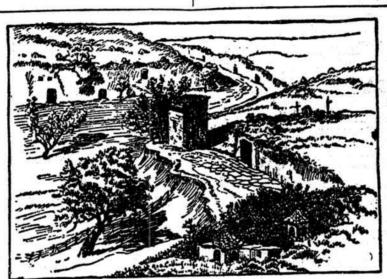
CATERPILLAR'S CORSAGE

It is well known that the larvae of many insects, such as those of the case moths, clothes moths caddis files, tortoise beetle and the masked bug,



BOUQUET ON THE CATERPILLAR.

construct for themselves cases or arcipally as ventilators, for the winter tificial coverings, either for protection season is short, although pretty se- or concealment, and a new and somevere on account of its altitude. There what remarkable instance is described are very few windows, and most of the by R. Shelford, the curator of the rooms are in utter darkness, with the Saranak Museum, in the Zoologist. exception of the front ones, which re- He says: A native collector brought in ceive their light from the outside a quantity of spiraea-like plant, indoors. The large room opening on the tended for the food of butterfly-cater-



A TOWN WHERE EVERYBODY LIVES UNDER GROUND.

square tower is the entrance to a tun- cymose inflore-cences, which were still eir coming even lost the tradition of the to the shores of the lake. They belong to a distinct class of people, hold themselves aloof from surrounding associations, and possess a characteristic physique, noticeable for its wild beauty, which, in the young women, is very remarkable.

### A Horse Umbrella.

There is an old adage which says that "A merciful man is merciful to his beast," that certainly shall be applicable to those who adopt a recently patented device which has for its object the comfort and welfare of the modern draught agimal.

This affair, of which the accompany ing illustration gives a good idea, is limit of economy had been reached in nothing more or less than an umbrella which extends over the front of the wagon, or carriage, over the attached sued for a system of transportation horse, or horse, and protects them which has the distinction of being of from the burning rays of the sun or still smaller dimensions. In fact, it the downpour of rain or falling snow. has but a single rail. This patent has

The arrangement of the affair is such that the umbrella follows the movements of the animal, turning to right or left as he turns, so that it always maintains a position directly above. By a simple contrivance the shelter



### The Phillipine Coast Line.

statement that the Philippine Islands can be counted on the charts.

Domestic telegraph business in Germany in 1902 was forty-three per cent. above 1892, but business of Stock Exas well as to the children. It is a change houses fell off eighteen per

Savings deposits in Chicago banks Railroad employes and their families have passed the \$100,000,000 mark. In the past year they have increased more than \$32,000,000.

cliff on the right-hand side of the pillars. It bore numerous pale green

nel of cuniculus. Cuniculii were much in bud, and presently one of the used in time of war by the ancient branchlets was noticed to be moving. Etruscans. The one I refer to leads This proved to be due to the presence down and far out into a wooded and of a small Geometer caterpillar, covsecluded dell on the shores of the lake. ered with buds from the inflorescence, The early history of San Stephane is on which it was feeding. This bore the lost in the dim ages of the Etruscan following spine-like processes, a dorsal rious counties. Meanwhile there is a period, and the inhabitants I met with, pair on the fourth segment, a dorso-lat- universal demand for immediate relief, cultivators and fishermen, evidently eral pair on segments five, six and and from all larts of the State the descendants of that strange race, have seven, a lateral pair on the eighth legislators are urged to appropriate at and the record and pension office of segment and a short dorsal pair on the this and the following session at least eleventh. There were also some small \$2,000,000 annually for highway work, tubercles in the positions shown in the accompanying sketch. To these spines strings of buds, connected by silk, were fastened in a similar manner, and when the green buds faded or were removed, they were immediately den will fall upon the counties conreplaced by fresh ones. "A bud would cerned, while the public at large will be shorn off with the mandibles, then held in the two front pair of legs, and through with acclamation as a meascovered all over with silk issuing from the mouth. The larva then twisted the greatest number."-New York Herround the anterior part of the body, ald. and attached with silk the bud to one of the spinous processes, and another bud would then be attached to this. and so on, until a sufficiently long string (generally three or four buds) have in the past ten years spent about was made, when operations on another \$10,000,000 as State aid for building spine would be commenced." The wagon roads. About \$6,000,000 has larva fed on the buds of the inflores- been added to this sum by the counties cence, scooping out the interior, and and towns where the State roads were (when not hurried) using the empty built, and about 2500 miles of State shells in preference to whole buds for road have been completed in these its covering. When irritated the four States. Pennsylvania last year larva curled up, as shown in the appropriated \$6,500,000 for the buildsketch, and remained in this position ing of State roads. Wherever State for fifteen or twenty minutes. At roads have been built the selling price other times it would sway about, look- of farm lands has been increased from ing like a branchlet blown by the twenty per cent. to fifty per cent. and breeze. The larva spin soon after even more in some cases. The 2500 capture, forming a silk cocoon covered with green buds, but it was, un- been of such benefit to the farmer that fortunately, destroyed by ants, and as they have caused a great demand for no other specimen could be discovered, more good roads. Five States have it is supposed that, as is well known to be frequently the case with specially wagon roads by a State appropriation. protected insects, the species must be very rare. The perfect insect is, of

course, at present unknown. Education Bad For Farmers' Boys. While complaining that the textbooks in the common schools lead away from the farm Dr. John Graham Brooks said: "Look with me into an average Massachusetts school house. Its arithmetic, its geography, its penmanship, its bookkeeping and its reading book, which appeal to the imagination of the farmer's child, are still dominated by clerk and trading point of view. As one listens to the teaching it is as if the one object were to create discontent with the country life-to make every bright child hate his surroundings. The instruction seems to assume the failure of the farm life. The inexhaustible charm and resource of the country have no part in this teaching."

Illusion of the Theatre.

It is a mooted point whether women should be taken to the theatre at all at a young and impressionable age, seeing in what a totally unreal light the modern young man is presented by the average dramatist. Behind the footlights the handsome- clean-shaven fellow has principles as unimpeachable as his dress clothes, a soul as speckless as his dazzling waistcoat.-Ladies'

To the numerous branches of the insurance business in Germany-as, for instance, life and fire insurance, insurance against burglars, against damage caused by hail and bursting of water pipes, etc.-the insurance of machinery has been added.



A Universal Demand.

T is not only the drivers of

pleasure vehicles, the owners of high stepping pairs or automobiles, but the farmers of the State who have vast crops to move who are most insistent upon the imperative need of good roads and who are pledging the payment of vast sums from their local treasuries if the necessary State aid will bring about the betterment of New York's public highways. The would-be driver for pleasure who bumps along country roads that rival that traditional rocky route to Dublin swears between jolts that it is a shame that the Empire State's thoroughfares are not decent places of travel, but the farmers are the men of all others interested in the proposed great scheme of public improvement.

They use the roads more than any one else in their daily work and hauling crops en route to market, and though they were at first opposed to the State "good roads" appropriation and the additional county subscription to it that meant increased taxes to every one of them, they are to-day the most earnest advocates of the measare to be presented at this session of the Legislature. And their attitude s that of wisdom, for no money appropriated by the State brings more asting benefit to the community at arge than the sums given for the building of good roads.

In every locality where the betterment of the highways has ben ef fected by general and local taxation the voting of the necessary county subscription in order to gain State aid was first effected only after the most yigorous objection on the part of the farmer, who say only larger taxe: to pay in consequence. But the universal result of the better roads has been to transform the objectors into enthusiastic indorsers of the movement. Every county and township in this and other States that has experded money for the improvement has found that it has enriched the neighborhood vastly Not only has it increased the carrying capacity of the vehicles, lessened the cost of travel and diminished wear and tear, but it has tended to build up 2 county by making it more attractive in every way and drawing to it wellto-do people who are a source of revenue to the various localities.

The Legislature of this State in 1903 passed favorably : pon the proposed submission to the people of a constitutional amendment enabling the issue of bonds to the amount of \$50,000,000 for the building of good roads, half of the sum to be donated by the State and the other half loaned to the counties agreeing to meet half the local cost. This must be passed upon again in 1905 before it can go before the people for consideration, so it will be 1900 before such aid can be given the vaon the plan of the counties meeting half the necessary expenditure.

There should be no opposition to this proposed measure, for it is the wish of the whole State, and as half the burshare the benefits, the bill should go ure that will do "the greatest good to

The Farmer and State Aid.

Four States, New York, Massachusetts, New Jersey and Connecticut, miles of State road already built have found it good to aid in the building of Why should not the National Government aid in building roads in every State of the Union? Congressman Brownlow, of Tennessee, has answered this question by introducing in Congress a bill appropriating \$24,000,000 as national aid for building wagon roads. This sum is available at the rate of \$8,000,000 a year for three years, and is distributed to each State according to its population, except that no State shall receive less than \$250, 000. The States or counties receiving this money must add a like amount. This appropriation will build between 6000 and 7000 miles of splendid national roads and will give, say, from 100 to 500 miles to each State of the Union. It seen : to many farmers that It is time for the National Government to aid them and they Lope the bill will

become a law. A Live Question. The action of the Farmers' Institute, of Cuyahoga County, Ohio, in passing a set of resolutions asking the Cuyahoga legislative delegation to assist in the passage of "good roads" laws has awakened favorable comment. The fact is recognized that the subject of better roads is a live question, which as well as to the farmer. Members of the legislative delegation say that they feel sure the delegation will look with friendly eyes on any good bill suggested for the betterment of the roads. None of the delegates have any such bills, they say, but they are ready to give such bills their best considera-

Something like three fourths of the fer arms and munitions of war.

NASHUABANKERARRESTED WHITAKER WRIGHT DEAD

Talzen Ill Suddenly in Court, He Treasurer of Trust Company Accused of Embezzlement.

Had Just Been Convicted of Fraud, and Shortage Recently Detected by the Bank Directors Who Notified Commissioners-Institution Closed.

Nashua, N. H .- John P. Goggin, Treasurer of the Nashua Trust Company, was arrested, charged with embezzling a sum of money from the bank. The amount stolen is placed at between \$80,000 and \$100,000.

The Nashua Trust Company is in charge of the State Bank Commissioners pending an examination. The shortage was detected recently

by the directors, who notified the Savings Bank Commissioners at Concord The Commissioners took charge of the company's affairs and posted a notice that the bank would not open for business. The Nashua Trust Company has a capital of \$150,000, and usually caries deposits running in amount from \$600,000 to \$650,000 in the savings department. It also has a deposit department, the deposits of which will swell the total carried by the bank to about \$1,000,000.

It was announced soon after Goggin's arrest that his position was not due to speculation in stocks, but, according to those most intimately acquainted with the bank's affairs, to his having given assistance from time to time to a friend.

Up to the time of his arraignment in court Goggin made no statement. He had a hearing soon after his arrest and pleaded not guilty. He was held in \$10,000 bonds for his appearance before the Hillsborough County Grand Jury.

Goggin is one of the most prominent bank officials in New Hampshire, and he not only has a wide acquaintance in this State, but he is well known in banking circles in Boston, Lowell and other Massachusetts cities. He came here from the West about ten years ago, and in a short time he was made Treasurer of the trust company. Goggin became very popular, and his arrest came as a stunning blow to his business associates and to the entire city. He is about forty years of age and has a family.

In banking circles here the hope is held out that the defalcation will not result in the permanent collapse of the company. The bank examiners themselves have made no statement yet. but those in touch with the business here incline to the opinion that depositors will lose nothing and that the concern will be able to resume busi-

Nashua has a population of about 25,000, and since 1890 four banking institutions have closed their doors forever and banks in several neighboring owns have been forced to suspend, hiefly through losses sustained in investments in the Western States. It estimated that within ten years ci.iens of Nashua have lost fully \$2,000,-000 through the embarrassment of banking institutions.

HOUSE PASSES ARMY BILL.

Appropriations of \$75,000,000 Go Through With Amendments, ... Washington, D. C.-The House passed the Army appropriation bill, carrying

approximately \$75,000,000, after adopting several amendments. The provision for the consolidation of the Adjutant-General's department the War Department into a bureau to be known as the Military Secretary's Office, was stricken from the bill on a point of order raised by Mr. Grosvenor. The item of \$400,000 for the construction of an Army General Hospital in Washington also went out on a point of order, as did the paragraph providing for the construction of a submarine cable from Sitka to Fort

Liscum A resolution calling on the Secretary of State for information as to the number of carriages maintained by the Government for the State Department was adopted.

GERMANS SUFFER HEAVY LOSSES

Hereros Repulse Them and Are Now Threatening Windhoek.

Berlin, Germany. - An official dispatch from Windhoek, German Southwest Africa, says the Germans have lost heavily in unsuccessful attempts to relieve Okabandja, that five settlers and their entire families bave been murdered and that the Hereros are threatening Windhoek. The garrison of Windhoek numbers 230 men, part of the force being horsemen, with two machine guus.

A German patrol which engaged the natives near Hope Farm lost a reserve officer, Von Boysen; one non-commissioned officer and six men killed.

ABEEL TO BE EXTRADITED.

Higher Court Decides Against Him and He Agrees to Return.

Toronto. Canada.-Justice Street has sustained the decision of the magistrate at Welland, Ont., in the extradiion proceedings against. James N Abeel, of New York City, charged with forgery, and ordered that Abeel be renoved to the United States.

There will be no further appeal uness Abeel suddenly changes his mind. He told the jail authorities at Welland that he is now willing to return to New York and stand trial.

Land Officer Suspended. Secretary Hitchcock suspended from the General Land Office Charles A. M.

faith in a recent investigation. Boy Trainwreckers Confess.

Myron Aldrich, fourteen sears old;
Lowell Ellis, thirteen, and William Denton, fifteen, were arrested at Las

Schlierholtz, charged with breach of

Vegas, N. M., and confessed to wrecking an extra Denver and Rio Grande freight train at Florence, Col., on January 10. Killed in Train Wreck.

Gates, Tenn. Several people were reported killed. College and Educational Notes.

'An Illinois Central train, from New

Orleans for Chicago, was wrecked near

Spain is to start fourteen new agri-Of the 638 colleges in the United States 330 admit women.

Ten years ago Columbia University mustered sixty-six instructors, all told; now it has 135.

Professor Filbert Roth, who holds the chair of forestry in the University of Michigan has been elected Forest

Warden of the State. Of the 307 freshmen who entered We'lesley College this year, 106 came from public, schools.

Sentenced to Seven Years' Penal Servitude.

London, England.-Whitaker Wright, the company premoter, who became notorious in Great Britain and the United States after the crash of the London and Globe Financial Corporation, with the attendant ruin of other companies, died here unexpectedly.

Quickly Passed Away.

He was attacked with a sudden illness after he had left the King's Bench Division of the High Court of Justice, where he had been convicted of fraud and sentenced to seven years' penal servitude. Two physicians were summoned, but could do nothing for the stricken man, whose death they attrib-ute to heart disease.

The jury before which Wright had been on trial for twelve-days on nu-merous counts for fraud was charged by Justice Bigham, and, after being out an hour, brought in a verdict of guilty, and Wright was sentenced to seven years' penal servitude; the most severe penalty within the power of the judge to pass. Mr. Walton's plea in

mitigation had no effect. Justice Bigham, in passing sentence said he could see nothing to excuse the crime of which Wright had been con-victed, and he could not conceive a worse case. He must, therefore, allot the most severe punishment the law permitted.

The sentence was followed by a commotion in a distant part of the court. One man shook hands with Wright as the latter left the court by the private exit, accompanied by his counsel.

Almost immediately afterward Wright was taken suddenly ill and col-

lapsed in the ante-room of the court. He grew rapidly worse, and in less than an hour after his sentence he was The tragic end of the case created a

tremendous sensation. Wright's friends said all along that while he was hopeful of his acquittal they were certain he would not survive a sentence and would commit suicide. Dealing with the evidence, Justice Bigham described as singular the way in which thousands of pounds sterling

became millions on paper, so far as the Lakeview shares were concerned. The London and Globe and the Standard companies were gambling concerns which excited his indignation. In the course of his long experience Justice Bigham had never-before heard of anything like the transactions which pre-ceded the hopeless bankruptcy of the London and Globe Financial Corpora-Whitaker Wright was born in Ches-

hire, England, in 1846. His parents, who were in comfortable circumstances, gave him a good education, and he qualified as an expert mining engineer and showed special aptitude as a chemist. In 1867, after his father's death, he came to America, and was employed in mines in the West as an assayer. He removed to New York in 1880 with a fortune obtained as a mining prospector.

He returned to England in 1889 and conducted financial operations on such a vast scale as to earn for him the repatation of a Monte Cristo. His lavish expenditures dazzled the British public, and he was regarded for a time as the greatest financial genius of the age. He organized company after company. He formed the London and Globe FInance Corporation, Limited, to take over the various securities of mining corporations in which he was interest-In December, 1900, this corporation failed, and carried ruin to many homes in Great Britain, and crippled several prominent business Many members of the London Stock Exchange were ruined by the failure. Thirteen banking and brokerage firms failed as a result of the collapse of his company.

JURY HOLDS MAYOR.

Must Answer With Others For Iroquois Fire,

Chicago, Ill. - The Coroner's jury. which for three weeks has been hearing evidence relating to the fire in the Iroquois Theatre, returned a verdict by which the following persons are held to await the action of a Grand Jury:

Carter H. Harrison, Mayor of Chicago; Will J. Davis, proprietor in part and manager of the theatre; George Williams, Building Commissioner of Chicago; Edward Laughlin, building inspector under Williams; William Sallers, fireman in the theatre; James B. Cummings, stage carpenter; William Mullen, who had charge of the light that caused the fire; William H. Musham, Chief of Chicago Fire Department.

It was at once decided by the Coroner that all the men held for the Grand Jury should be taken into custody at once. He therefore prepared warrants for their arrest, and called on the police to serve the warrants.

When the Coroner's jury retired for its deliberation it had before it 750,000 words of testimony, given by 572 persons.

Uruguayan Rebels Scattered. The Government forces of Monte-

rideo have again defeated Saraiva. The rebels, broken up into several bands, are crossing the Brazilian frontier, where they are being disarmed.

Freeman Cohen Dead. The death is announced from Johannesburg. South Africa, of Freeman Cohen, the Rand financier.

Burglars Put to Flight. Two burglars who were at work on the postoffice at Rowley, Mass., escaped after a running fight in the street

with townspeople. The men had blown off the outer door of the safe, but had secured nothing. German Officer Killed in Duel.

Two officers of the garrison of Chem-

nitz, Saxony, fought a duel with pistols on the parade ground at Berlin, Germany. Lieutenant Schubert was instantly killed.

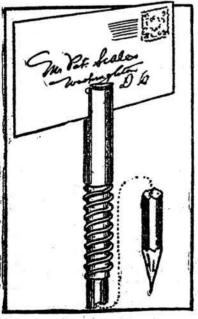
World's Fair Pointers.

San Domingo has officially accepted the invitation to participate in the World's Fair. A world's congress of secret societies

is to be held in St. Louis next fall in connection with the Louisiana Purchase Exposition. A model of the Assonan Dam, which is on the first cataract of the Nite.

will be exhibited in Great Britain's display at the World's Fair. A plaster cast of a gigantic whale has been recently made in life sixe

from private schools, as against 191 by the National Museum for exhibition at the St. Louis Expesition.



mount of postage necessary. The in- make up eight per cent. of the popula-

ptor proposes to weigh ou this vest- tion of the United States.

Forty-five thousand homeless children have been sent to Canada from

Great Britain and put in good homes during the past thirty-five years. Last there were five applications on file with the societies engaged in the work of rescuing the waifs. Consequently British philanthropists, who know how carefully the children are looked after in their new homes, think that the number sent from the over-crowded British cities to the spacious colonies could be increased with profit to the empire good way to save men and make a

nation.-Youth's Companion.

SUNSHADE FOR DRAUGHT ANIMALS. can be tilted to one side or the other, so that under any circumstances the animal is afforded the best possible

A geographical magazine makes the have a coast line double that of the main part of the United States. The measurement given is 11.444 statute miles while the total area is stated as year for every child that was sent 115,026 square miles. In the Philippines there is one mile of coast line to every ten miles of area; in the United States the proportion is one to 555. Field. It is said that 3000 islands and islets

cent.

In the first half of 1903 five railways went into the hands of receivers, but they aggregate but seventy-nine miles of track.

is of interest to the dweller in the city tion .- Automobile Topics.

innual expenditure of the Turkish Government has of recent years been